



## CITED REFERENCE 2

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**TITLE: COLORED LIGHT-TRANSMITTING YAG SINTERED COMPACT AND PRODUCTION THEREOF**

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- european:

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### Abstract of JP4175265

**PURPOSE:** To enable production of sintered compact having high light-transmitting property by adding an oxide of europium, dysprosium or holmium as a coloring agent to ytterbium, aluminum and garnet which are main ingredients.

**CONSTITUTION:** An oxide of Er, Dy or Ho or inorganic salt capable of providing these oxides or alkoxide by heating is added as a coloring agent to Y<sub>2</sub>O<sub>3</sub> powder and Al<sub>2</sub>O<sub>3</sub> powder having  $\leq 99.9\%$  purity and  $\geq 5\text{m}^2/\text{g}$  specific surface (BET value) at an amount of 0.05-37.5mol% expressed in terms of each oxide and both components are blended. The blend powder is calcined at 1200-1500 deg.C and subjected to pressure forming at pressure of  $\geq 0.5\text{ton/cm}^2$  and then sintered at 1600-1850 deg.C. The sintered compact is subjected to mirror polishing to provide colored YAG sintered compact having light transmitting property and being  $\geq 10\%$  in linear transmittance in 0.8 $\mu\text{m}$  wavelength using a sample having 1mm thickness. The sintered compact is reduced in scattering in crystalline grain boundaries, because it uses cubic YAG as a matrix and free from grain boundary with coloring agent, because the coloring agent is subjected to solid solution in the matrix and has garnet structure consisting of single phase.

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